

## SELECTION FOR HIGH HAEMOGLOBIN LEVEL IN PIGLETS TO DEVELOP AN ANEMIC-RESISTANT LINE OF SWINE

M.H. FAHMY and C.S. BERNARD

Canada Agriculture, Research Station, Lennoxville, Que., J1M 1Z3 (Canada)

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### ABSTRACT

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A population of Yorkshire pigs was selected for four generations, the criteria being haemoglobin level of the piglets at day 28 of age. A non-selected line served as a control. In both lines no iron was supplemented during the first 4 weeks of age. Haemoglobin level at day 4 was similar in the piglets of both lines. At days 14, 21 and 28 the piglets in the selected line had significantly higher haemoglobin levels than those of the control. Haemoglobin level of the sows was similar in both lines, it increased after mating and peaked at day 28 of lactation. Little differences were found between the piglets of the two lines in growth and mortality rates. Heritability estimates for haemoglobin level and genetic and phenotypic correlations among the traits studied were calculated.

### INTRODUCTION

The iron supplied by the sow through its milk is seldom sufficient to maintain a normal level of haemoglobin in its piglets. Young piglets obtain the extra iron needed from the feed and feces of their dams and from the soil. If these sources are eliminated or greatly reduced as the case in modern piggeries, the young piglets often suffer from iron-deficiency anemia. To prevent this anemia, the administration of iron into the piglets within the first week of life became a standard management procedure.

It has been observed, however, that not all piglets deprived of iron develop anemia and even within the same litter some pigs survive the critical first few weeks and proceed to grow and reproduce normally. This implies that a wide variation exists between pigs in their susceptibility to develop anemia. The extent by which this variation can be capitalised to develop, by selection, a line of pigs naturally resistant to anemia makes the subject of this paper.